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(54) **Implantable pacemaker having AV interval for providing ventricular pacing.**

(57) A dual-chamber implantable pacemaker configured to operate in the DDD or DDDR mode automatically adjusts its AV (or PV) interval to an amount just less than the natural conduction time of a patient, thereby assuring that ventricular pacing occurs in a patient's cardiac cycle at a time near when a natural ventricular contraction (an R-wave) would occur. The pacemaker includes a pulse generator that generates ventricular stimulation pulses (V-pulses) at the conclusion of a pacemaker-defined AV (or PV) interval if no natural ventricular activity (an R-wave) is sensed during such AV (or PV) interval. The AV (or PV) intervals are automatically adjusted by the pacemaker to be just less than the natural conduction time sensed by the pacemaker, where the natural conduction time is the time between atrial activity (a sensed P-wave or a delivered A-pulse) and the subsequent natural ventricular activity (R-wave). The system and method are particularly adapted for use by patients suffering from a cardiomyopathy in order to improve cardiac output.

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